THE EUGENICS REVIEW

Galton Centenary Addresses.

SIR FRANCIS YOUNGHUSBAND, K.C.I.E., K.C.S.I., President of the Royal Geographical Society, gave the first of the three addresses, at the Francis Galton Centenary Celebration held by the Society on Thursday, February, 16th, 1922. He was followed by Sir Henry Rew, K.C.B., President of the Royal Statistical Society. Major Leonard Darwin, D.Sc., President of the Society and President of the International Eugenics Commission, gave the third address.

I feel it peculiarly fitting to be the first to introduce in retrospect the reminiscences of Sir Francis Galton's life, as it naturally falls to me to speak of him as a traveller, and his explorations will be seen in his case to have made the beginning of his scientific work in other directions; and indeed the stimulus which first prompted those studies which later led him far into other fields: so that, beginning as a geographical explorer, he became an explorer in the mathematical method of statistics and in the virgin soil of what is becoming a 'Science'—Eugenics.

To the Royal Geographical Society falls the honour of setting him in the way of his first enterprise, for when as a young man, Francis Galton desired to travel, it was to the Royal Geographical Society that he came for advice, and it was under its auspices that he made that first journey for which he was awarded the Gold Medal of the Society.

His geographical activities were not confined to exploration. He gave much thought to the theory of travel, and he is probably best known to geographers for his little book, "The Art of Travel," which went through several editions, and which has helped and influenced many hundreds of travellers.

This book gives so many details of what a traveller ought to know, that many have been frightened at the bare thought of undertaking a journey, if so much knowledge was required beforehand. I felt truly alarmed at the many regions of which he demanded some knowledge—information enough indeed to secure the collection of accurate data and to insure sound and exact observation—points on which he perseveringly insisted.

And yet in this book the true secret of travel is never mentioned, and in my own case, I had to discover it for myself. When going across the great desert of Gobi I began to find an almost intolerable

strain in the daily supervision and urging forward of my carriers: I lit on the plan of putting myself in their hands and making them take me. Instead of daily rising at dawn, and going the camp round to set all in motion for the day's march, I called up my interpreters and leading men, and agreed with them for a definite reward if we got to my goal at a certain date, with an agreed increase of amount for every day in advance of said date should we arrive earlier, and a similar fine for every day's delay. From that moment I had done with all trouble. The camp was astir long before me, and I was aroused by my men and urged forward, while the nightly halt was cheerfully pushed to the farthest practicable point.

Most people will understand that a traveller must carry the people of the country along with him. But the true secret of travel is to make the people of the country carry him—to make them feel responsible for him—to make the success of the expedition their business. This knack Galton had. No mention is made of it in the book above referred to, and it was only in reading his other book describing his own journey, and there only in reading that unwritten part that runs between the lines, that I saw he knew the secret.

He started on his journey in Damaraland in South Africa when he was only twenty-eight. But he managed to attach good men to him. He got them to work whole-heartedly with him for the success of the expedition, with the result that he was able to carry out a piece of original exploration of great value, in spite of having to travel through very difficult country and in a territory inhabited by natives who were decidedly unfriendly.

He never made any other exploration. But this was only the beginning of his long association with the Royal Geographical Society, and his influence in the discoveries of this century was far-reaching. He served for many years on the Council of the Society. And it was this period which was the greatest period of African travel—the time of the great journeys of Livingstone, Stanley, Burton, Speke and Grant: and here he interested himself wholeheartedly in promoting these adventures. The weight of his influence was felt not only in the encouragement of great undertakings and in wise counsel as to their direction, but in his unfailing insistence on exact study. He constantly laid stress on the necessity for exactness of measurement in collection of data and the value of observation with precision. His own inveterate habit of statistical activity is happily coupled with reminiscences of the Society's Council Chamber in the following passage of his autobiography:

"Many mental processes admit of being roughly measured. For instance, the degree to which people are bored, by counting the number of their Fidgets. I not infrequently tried this method at the meetings of the Royal Geographical Society, for even there dull memoirs are occasionally read. A gallery in the meeting is supported by iron columns. The portion of the audience as seen from the platform who are bounded by two of these columns, and who sit on two or three of the benches, are a convenient sample to deal with. They can be watched simultaneously. The number of movements in the group per minute can be easily counted, and the average number per man calculated. I

have often amused myself with noticing the increase in the number as the audience becomes tired. The use of a watch attracts attention, so I reckon time by the number of my breathings, of which there are fifteen in a minute: they are not counted mentally, but are punctuated by pressing with fifteen fingers successively. The counting is reserved for the fidgets. These observations should be confined to persons of middle age. Children are rarely still while elderly philosophers will sometimes remain rigid for minutes together." (Page 278.)

The width and depth of his interests show him to have been a man cast in a big mould. He is one of those who did most for Geography in this country.

By Sir Henry Rew, K.C.B.

We meet to honour the memory of an eminent Victorian. It is true that Francis Galton outlived the Victorian era; it is true also that his alert mind was unfettered by environment and reached ever forward to new activities. But he possessed in a high degree one of the qualities which we associate with the memory of great Victorians, that of many-sidedness. In these specialist days versatility, especially in the pursuit of science, is rare, and with that characteristic Francis Galton was extraordinarily endowed. Explorer, Geographer, Meteorologist, Anthropologist, Biologist, Psychologist, Statistician, Eugenist—to all these titles he established an unquestionable right. He touched no subject which he did not illumine, and those who are concerned in any one of the branches of human activity denoted by these titles may regard him as their colleague.

To me it falls to claim him as a Statistician.

Francis Galton's genius for statistics was a natural inheritance. His grandfather, Samuel John Galton, was "a scientific and statistical man of business" who had a decidedly statistical bent and loved to arrange all kinds of data in parallel lines of corresponding lengths, frequently using colour for distinction. His father, Samuel Tertius Galton, was "eminently statistical by disposition" and made a sliding rule his constant companion. He published a chart, with explanatory observations, showing the relation between the Bank of England notes in circulation, the rate of foreign exchanges and the price of gold and silver and of wheat. If confirmation were needed of his statistical aptitude I might find it in his sense of humour, a quality which, contrary to popular belief, is frequently associated with a bent for statistics. When his ancestral home lost its charm of isolation and became unattractive as a residence he leased it to the proprietor of a lunatic asylum, explaining that no one in his senses would live in it.

Francis Galton was elected a Fellow of the Royal Statistical Society in 1860 on the proposal of Colonel E. H. Sykes, seconded by Mr. James Heywood. He served on the Council from 1869 to 1879, and as a Vice-President in 1875. In 1886 he was elected an honorary member of the International Statistical Institute, which had been formed in London in the previous year. Those on whom this distinction was conferred were—to quote the rules—"persons who have

distinguished themselves in the domain of statistics," and the number was strictly limited. The fact that Galton was one of the first to receive it is evidence of the reputation as a Statistician he had established, not only at home, but also abraod. His first contribution to the proceedings of the Statistical Society was in 1873 (Vol. XXXVI). Its title was "The relative supplies from town and country families to the population of fututre generations." He described it as an enquiry into the relative fertility of the labouring classes of urban and rural populations, not as regards the number of children brought into the world, but as regards that portion of them who are destined to become the parents of the next generation. By the help of Dr. Farr, then President of the Society, he obtained extracts from the census returns relating to 1000 families of factory hands in Coventry and 1000 families of agricultural labourers in rural parishes of Warwickshire. The results of his examination and analysis, set forth with great lucidity and terseness, led to the conclusion that " the rate of supply in towns to the next adult generation is only 77 per cent. of that in the country. In two generations the proportion falls to 59 per cent., that is the adult grand-children of artizan townsfolk are little more than half as numerous as those of the labouring people who live in healthy country districts."

In 1885 the Statistical Society celebrated the completion of fifty years' work, and marked the occasion by the preparation of a special Jubilee volume of its Journal. Among the contributions to this volume were two short papers by Francis Galton. One called attention to a common method of calculating mean values in certain classes of observation—those referring to the stature of a population being cited as an illustration—in which a difference in the degrees of minuteness to which measurements are recorded led to error, and the other described a graphic method of dealing statistically with values which vary in one dimension.

In April, 1896, a paper was read before the Statistical Society by Mr. Udny Yule on the "History of Pauperism in England and Wales from 1850, treated by the method of frequency curves." The paper included a detailed explanation of the methods used. Galton took part in the discussion, and in response to a request made to him during the meeting, amplified his views in a written memorandum, which was published in the Journal. It dealt with the application of the method of percentiles, the principles of which he had explained in his work on "Natural Inheritance" (1889).

In the coining of words Galton has acquired fame by his invention of the terms "anticyclone" and "eugenics," but he exercised his verbal ingenuity in many other cases. In statistics he introduced the terms "percentiles," "quartile," "decile," and some others. But he did much more than this, for he may be truly described as the parent of modern statistical methods.

In his statistical work Galton may be said to have inherited the mantle of Quetelet, though his attention was first drawn to the normal law of error by its use by William Spottiswoode in a geographical memoir. From references in "Hereditary Genius" (1869) it appears that he derived his knowledge of the properties of the curve from

Quetelet's "Letters." His first contribution to the methods of statistics, foreshadowed in "Hereditary Genius," was the method of grades, or percentiles. in a memoir published in 1875 entitled "Statistics by inter-comparison with remarks on the law of frequency of error." In this he emphasised principally, indeed almost wholly, the application of the method to unmeasured characters. His object was to describe a method which was "applicable to a multitude of objects lying outside the present limits of statistical enquiry"; the objects need only be ranked in order as regards the character considered; the middlemost (median) then indicates the average, those one-quarter distant from either end (quartiles) the divergency of the series. These particular objects need not, perhaps cannot, be measured as regards the character concerned, but if they can be pictured or described we obtain a summary picture or description of the series. The method was freely used in "Natural Inheritance" and the memoirs that preceded that work, and Galton's continued interest in it is shown in many papers subsequently published by him. Among these, in addition to the contribution to the Statistical Society's proceedings already attended to, mention may be made of notes on "the median estimate" in the British Association Report for 1899, on a geometrical method of determining the median of a normal distribution from two centiles in "Nature," 1900, on the application of the median in voting, e.g. for damages to be awarded by a jury or in guessing, in "Nature," 1907, and of the explanatory introduction to a table of Grades and Deviates of the Normal Curve calculated by Mr. Sheppard in Biometrika 1907. A memoir "on the most suitable proportion between the values of first and second prizes" published by Biometrika 1902 is related to the same train of ideas. It may be noted that the conclusion arrived at was that if in a competition only two prizes are given, the first prize, in round numbers, should be three times the value of the second, whatever be the character of the competition and whatever the number of competitors.

In the Dictionary of National Biography I venture to think that something less than justice is done to Galton as a statistician. After reference to his statistical investigations, extending over 40 years, to prove the hereditability of genius it is remarked:—

> "Such investigations necessarily brought him to face the fundamental principles of statistics and although his mathematical equipment was inadequate he obtained a remarkably clear insight into the subject."

I submit that his position in regard to statistics is more adequately stated by Mr. Udny Yule, a Vice-President of the Royal Statistical Society, in the following passage from the obituary notice of Francis Galton which appeared in the Society's Journal:—

> "The method of percentiles, while in many respects novel, may be regarded as a new application of a much older idea—the idea at the root of the determination of the median and of the "probable error." By his invention of the method of correlation Galton opened an entirely fresh field of work. Certain memoirs by earlier writers deal with problems which present some

mathematical similarity to those with which he was concerned—the distribution of shots on a target or of stars in space—but to no one had it occurred to apply such methods to the serious study of statistical relations, nor to employ a single co-efficient as a measure of the closeness of the relation between two varying quantities. Just as the method of percentiles arose from Galton's work on the inheritance of genius, the method of correlation arose from his studies on the inheritance of stature and in anthropometry."

It may be true that among the many objects of Galton's attention and regard the coy maiden Statistics was not his first love, and still less his only joy, but at least it may be said that she was his valued companion and oftentimes his guide in his many enterprises.

He was an indefatigable collector of statistical data. It has sometimes been suggested that a true statistician is one who collects statistics without any object, or at any rate without regard for any result which may be obtained from them. Indeed, in the early days of the Statistical Society this was the orthodox faith, and the wheatsheaf, which is the Society's badge, was encircled by a band on which was inscribed the proud motto *aliis exterendum*. The Society has long ago yielded to the modernists, and for many years has done its own threshing. Galton certainly was never one of those who leave the threshing to others. He set out upon his investigations with definite objects in view. He describes in his "Memories" one of his methods of investigation. "Whenever," he writes, "I have occasion to classify the persons I meet into three classes, "good, medium, bad," I use a needle mounted as a pricker wherewith to prick holes, unseen, in a piece of paper torn rudely into a cross with a long leg. I use its upper end for 'good,' the cross-arm for 'medium,' the lower end for 'bad.' The prick holes keep distinct and are easily read off at leisure. The object, place and date are written on the paper. I used this plan for my beauty data, classifying the girls I passed in the streets or elsewhere as attractive, indifferent, repellant."

The object in this case was to obtain materials for a "Beauty map" of the British Isles, but the operation might properly be termed the collection of statistical data.

But indeed, aptitude and affection for statistics were ingrained in him and formed a large, if not a predominant, factor in his mental equipment. He acknowledges his debt to his progentiors for a considerable taste for science, statistics and poetry. The medical studies which occupied his earlier youth led him to reflect on the deficiencies of medical statistics at that time. "Medical statistics" he observed, "are the least suitable I know for refined comparisons, because the conditions that cannot be, or at all events are not, taken into account, are local, very influential and apt to differ greatly. It is, however, humiliating to find how much has failed to attract attention for want of even the rudest statistics."

I cannot refrain, in bringing to a close an allocution which is all too unworthy of its theme, from quoting from the "Memories" Galton's just explanation and vindication of the function of Statistics:—

"Confusion is often made between statistical and individual results. It sometimes seems to be held seriously that if the effect of a particular union cannot be accurately foretold, the application of the rules of Eugenics is vain. This is not the case. Statistics give us assurance concerning the fate of such or such a *percentage* of a large number of people which, when translated into other terms is the probability of each of them being affected by it. From the statesman's point of view, where lives are pawns in the game and personal favour is excluded, this information is sufficient. It tells how large a number of undesirables or desirables can be introduced or not into a population by such and such measures. Whether their names be A, B, or C, or else X, Y, or Z, is of no importance to the 'statistician'—a term that is more or less equivalent to that of 'Statesman'."

In remembering Francis Galton as a Statistician we render homage to his many-sidedness, and we glorify his name as a pioneer in the path of human progress. If the proper study of mankind is man his renown as the prince of students can never fade. In any case, on behalf of the Royal Statistical Society and of all the human interests which it represents, I esteem it a high honour to be permitted to contribute a leaf of laurel to the crown of remembrance with which to-day we commemorate the work of Francis Galton.

By Major Leonard Darwin.

When walking in the streets of London we often see oval tablets over the porch or beside the doors of private houses. At the top of these tablets, and presumably giving the most important item of information which they contain, the letters L.C.C. may frequently be noted, thus informing us that they were erected by the London County Council. Lower down on the tablet we are informed, if it is, for example, St. James's Square through which we happen to be walking, that the house we are passing was at one time inhabited by William Pitt or Mr. Gladstone. Now many others besides myself may in the past have wondered why no such memorial had been placed on 42, Rutland Gate, the house so long inhabited by Sir Francis Galton. On making enquiries from the London County Council, I was informed that that body make it a rule or practice not to erect a tablet on any house until twenty years after the death of the distinguished individual who had lived therein; this being to avoid hasty action difficult to prevent at a time when to hint that his merits had been grossly overestimated by the public would be an unpleasant duty. This seems to me to be an excellent self-denying ordinance; but it has, however, the unfortunate result that no such memorial can be erected at public expense at or before the date of the centenary of the birth of anyone who, like Sir Francis Galton, lived to be over 80 years of age. But as a fact, such a memorial is now to be seen over the porch at 42, Rutland Gate, informing all passers-by that Sir Francis Galton, Explorer, Statistician, and the founder of Eugenics, lived there for fifty years. Although not erected by the municipality, I should like to say a word or two as to how that tablet came to be placed where it is now to be

seen; not because, like the London County Council, I think that the matter is in itself of any importance whatever, but merely because in this instance it does throw a side light on the character of the man to whose memory we are to-day doing honour.

Those here present who like myself were constant visitors at Rutland Gate—I see at least two—will all remember the little man, short in stature, with a strong foreign accent, who let one in at the door with a broad smile on his face. This was Giffi, Sir Francis's faithful Swiss Servant, who lived with him for 35 years, and to whom he felt, I believe, more like a friend than a master. Last year I received a letter from the late Mr. O Plant-Carcasson,* telling me that he was the owner of 42, Rutland Gate, and that Giffi, who on the death of Sir Francis Galton had passed on into his Service, had died recently. He added that Giffi had on several occasions requested him to write to me about the erection of a tablet in Rutland Gate, and concluded by stating that "I think I owe it to the dear old man"—that is, Giffi—"to mention to you that I am quite agreeable to permit" its erection by the Eugenics Education Society. This letter set me in motion, and with the generous aid of Mr. Plant-Carcasson, who had the inscription cut in marble in Italy, the tablet was erected by our Society last summer. You will notice when you see it that it has not got the letters E.E.S. at the top to let the public know that it was erected by the Eugenics Education Scoiety; but if in any brief way it could have been indicated it would not now have been put up but for the wishes of Galton's faithful friend and servant Giffi, I for one should have been delighted to have seen that fact placed on record. Here we have a proof of the falsity of the old saying that no man is a hero to his own valet. It is far more true to say that the real worth of a good man is best known to those who serve him most constantly, and it is with this thought in my mind that I rejoice to be able to place on record this proof of the respect and affection which Sir Francis Galton inspired in his own household.

When looking at this tablet we are naturally led to speculate as to what will be the sentiments of the passers-by say two or three centuries hence when they read the name inscribed thereon. Those learned in the history of either geographical exploration or statistical research will doubtless be reminded of some of the facts which have been recalled to our minds to-night in such an interesting manner by the Presidents of the Royal Geographical and Statistical Societies. Such persons will, however, I fear, be comparatively few in number, unless indeed the mental condition of the public will have by that time undergone a marvellous transformation! But what I should like now to know is whether the name of Galton will at that distant date arouse any thoughts whatever in the mind of the intelligent man in the street, that is of the educated public. This will depend on the way in which the history of the coming centuries unfolds itself in certain matters. The Eugenics Education Society is now striving to make the public pay serious attention to all problems connected with racial progress and racial decline; and if we, its members, hold erroneous views, it is to be hoped that our errors will soon be exposed, that our Society will

* Mr. Plant-Carcasson, I much regret to say, died this winter.

quickly sink into a well merited oblivion, and that many others besides myself will be spared a great deal of tedious and thankless labour! But if we are right, what then? If Galton's teachings remain unrefuted, and if his name will be unknown to the public centuries hence, that will mean, so I feel sure, that no steps will have been taken to prevent the racial deterioration which we now fear is in progress, and that the degradation of our national characteristics will have become well marked. Europe will for a second time have entered the dark ages, after a second decline and fall of a civilization in some ways comparable to that of ancient Rome. But if, on the centenary of Galton's birth we are in any way to follow Galton's example, we ought to-night at all events to take a determinately optimistic view of the future of eugenic reform; and, taking that view, and assuming a steady progress in all measures tending to promote racial progress, then few passers-by at that distant date will not know that to Francis Galton ought to be attributed in no small measure the improvement in the morals, intellect and health of the nation which will then have become indisputable. His will have become one of the great names in history.

But how will this eugenic victory have been won? The most important step in advance will be taken when Eugenics becomes a factor in religion, as Galton clearly saw would have to be the case. Scientific truths are always very slowly but very surely incorporated into all powerful religious systems, and this in spite of no small opposition. To maintain that the earth went round the sun was at one time held by devout Christians to be an offence worthy of death; whilst at present a belief in organic evolution is widely held in religious circles and from not a few pulpits the animal origin of man, is openly declared to be in no way antagonistic to religious thought. This indicates a great advance; but there is not the slightest chance of a halt being called at the point which we happen now to have reached. With an increased and more widespread knowledge of the laws of natural inheritance, further changes of opinion are inevitable. For examples the moral responsibility of parents in regard to their children is recognized by all religious teachers; but this sense of responsibility will in future be so extended as to be held to cover, not only the care of all children already born, but also the question whether in each case it was right that any child at all should have been born. When this broader sense of parental responsibility is generally accepted and widely inculcated as a religious duty, the eugenic victory will have been nearly won; for then it will become impossible to deny the moral necessity of utilizing and inducing others to utilize our knowledge of the laws of natural inheritance for the benefit of posterity. Changes in our ideas and social customs will come and ought to come; but our desire for progress, especially in regard to all sexual questions, ought always to be tempered by a sane conservatism. It is in order to secure wise and steady progress in the future, and to prevent the Eugenic movement from ever being led into harmful ways, that I am intensely anxious to secure a widespread interest in these racial problems. To weigh well every step before it is taken, whilst never standing quite still out of timidity, that is the policy I am confident that Francis Galton would have approved.

Moral ideals often need to be encouraged or enforced by law in order to bear their full fruit; and here it is that the statesman has to play his part. Now in my vision of the future I think I see the popularly-elected politician listening deferentially to the views confidently expressed by the biological expert, and then, utterly regardless of the votes of his constitutents, throwing all his energies into the promotion of sane and slow working measures designed to benefit his nation in the distant future. Perhaps I need not remind you that I am speaking with premeditated optimism to-night! When this happy state of things has arrived, many politicians are likely to have the following quotation from Galton's writings inscribed in letters of gold where it will be constantly visible, and where it will by auto-suggestion so influence their sub-conscious selves they will be continually and unconsciously led to advocate a policy of Eugenic reform! "A democracy cannot endure unless it be composed of able citizens; therefore it must in self-defence withstand the free introduction of degenerate stock."* No doubt the prevention of the influx of inferior types by immigration from abroad will have been lessened or prevented long before my imaginary perfect politician makes his appearance on earth. And no doubt when he does appear he will recognise that what Galton meant by the "introduction of degenerate stock" was rather the results which must inevitably flow from "that liberty of propagating children which is now allowed to the undesirable classes."† To prevent racial detereoration from this cause, and to give as much liberty as possible to the individual, will be the aims of our ideal statesman, aims which will not infrequently have to be adjusted to each other by a wise spirit of compromise.

I have spoken of the necessity of taking an optimistic view of the future of the eugenic movement well knowing that in this respect I have been a frequent sinner. I am glad, therefore, of this opportunity of reminding myself, and others at the same time, that in being hopeful we are certainly following the lead given to us by Galton; for without hope he could never have persevered for so many years in his advocacy of Eugenic principles, seeing how little support he received. And amongst our hopes we must, therefore, include the hope that Galton was well endowed with the faculty of rightly foretelling the future; a faculty which he would certainly have held to be hereditary, like all other mental qualities. As to that scientific bent of mind, possessed by himself and by his cousin, Charles Darwin, he traced it back to their common grandfather, Erasmus Darwin; and here we are tempted to enquire whether we can claim for Galton any natural prescience as springing from the same source. Erasmus Darwin was mainly known for his "turgid poetry that had become a temporary craze in" his day,‡ a craze which fills with astonishment all those who now attempt to read his poetry. Almost the only quotation from his works which is ever inserted in modern anthologies seems to be included merely because of the remarkable prophecy which it contains. Before

*_Memoirs of my Life_. F. Galton, page 311.

†Ibid, page 311.

‡Ibid, page 85.

reading it, which I shall do without any family pride as to its poetic style, may I remind you that it was written in the last decade of the Eighteenth Century, when Watt was making his first experiment with the object of obtaining rotary motion from a steam engine, and when Stevenson, the pioneer of railway traffic, was yet a little boy. The lines run as follows:—

*Soon shall thy arm, unconquered steam! afar
Drag the slow barge, or drive the rapid car;
Or on wide waving wings expanded bear
The flying chariot through the field of air.

His forecast of the methods of propulsion now adopted by aeroplane designers was certainly incorrect; but all the same this quotation indicates a remarkable power of looking into the future, a power which we eugenists confidently maintain descended in full measure to the poet's grandson, Francis Galton.

In my Utopia of two or three centuries hence, I have assumed the existence of a widespread and indisputable knowledge of the laws of natural inheritance. When these happy days arrive, the year 1822 will ever after be regarded as one of the most memorable dates in the history of science; for in that year were born both Francis Galton and Gregor Mendel. Mendel's great work lies outside the scope of our considerations to-night; though I cannot help expressing in passing the keenest regret that my father never even heard his name, and that a knowledge of his discoveries came too late to Galton to enable him to utilize them with any great effect. The line of thought encouraged by Mendel's discoveries led to the formation of many institutions at universities and elsewhere, where genetic research has been pursued mainly by means of direct experimentation on animals and plants. And in this connection I may perhaps express the great satisfaction we eugenists feel at the hearty co-operation and support which the American geneticists attached to such institutions gave last year to the International Congress of Eugenics at New York; an encouraging sign which I hope will be noted by English geneticists. Galton's work has developed on somewhat different lines, in so far as the growths from the seed sown by these two great men can still be distinguished; for, as we have already heard, many of Galton's notable advances were connected with statistical enquiries. He founded the professorship of Eugenics at the University of London, thus enabling his friend Prof. Pearson with great ability to lay mathematical foundations on which much work is destined to be built in future. With the aid of all these institutions, our knowledge of the laws of natural inheritance had made enormous progress during this century.

There was, however, in my opinion, another marked characteristic of Galton's work to which I should especially like to call attention; namely that he always had before him some benefit to mankind as the

*See *Botanic Garden*, Vol. I. Canto 6. Mr. Wheler-Galton points out to me that the next four lines are equally prophetic. They run as follow:

Fair crews triumphant leaning from above
Shall wave their fluttering kerchiefs as they move,
Or Warrior-bands alarm the gaping crowd
And armies shrink beneath the shadowy cloud.

final goal of his endeavours. He knew as well as anyone that in order to build any scientific structure we should begin to work at the very foundations; but the human superstructure which these foundations might carry was never absent from his mind. He saw clearly that to win in the eugenic campaign, a definite propaganda must be started and unremittingly pursued ; and it was doubtless with this thought in his mind that he became the Honorary President of our Society. In my Utopia well supported Eugenic Societies will have arisen in every populous centre, where a wise and temperate eugenic policy will be steadily advocated; and it is probably only a President of an existing Eugenic Society who knows to the full how lamentably we now fall short of that idea. Our Society struggled on somehow through the war and since the war; but it was often very uphill work, and it is no use pretending that we should not greatly appreciate further encouragement and further support. We want more men and especially more scientific men to follow Galton's example and to "take Eugenics very seriously, feeling that its principles ought to become one of the dominant motives in a civilized nation, much as if it were one of its religious tenets." Then again we must have a perfectly clear idea of what we are striving for; and in this connection the words with which Galton's autobiography closes may well be quoted. "Natural selection rests upon excessive production and wholesale destruction; Eugenics on bringing no more individuals into the world than can be properly cared for, and these only of the best stock." Here is the Eugenic programme in a nutshell; and to win in the long fight before us, we must press forward with the hope of benefiting posterity as our only reward, a posterity whose gratitude we may possibly win but whose voices we shall never hear. If that hope was reward enough for Galton, it should be reward enough for us also.